

Notice of Allowability	Application No.	Applicant(s)	
	10/658,049	BORIAK ET AL.	
	Examiner	Art Unit	
	Robert Sellers	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 29 April 2005.
2. ☒ The allowed claim(s) is/are 2-5, 7-15, 17-44 and 47-104.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>505</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

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An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Joe R. Prieto on May 23, 2005.

The application has been amended as follows:

Specification, page 1, before Background of the Invention insert:

--This application is a divisional of application no. 09/899,409 filed July 5, 2001, U.S. Patent No. 6,646,102--.

Claim 3, according to the amendment filed April 29, 2005, page 2, line 8; **claim 8**, page 6, line 11 and page 7, line 4; **claim 49**, page 15, lines 8 and 19; **claim 54**, page 18, line 5 (--and a--); **claim 56**, page 19, lines 4 and 15; **claim 63**, page 23, lines 4 and 15; replace "nil" with --a direct single bond--.

Claim 3, page 3, line 10; **claim 8**, page 6, line 13 and page 7, line 6; **claim 49**, page 15, lines 10 and 21; **claim 56**, page 19, lines 6 and 17; **claim 63**, lines 6 and 17; after "-P(O)Ar-" insert --, wherein Ar is an aromatic group--.

Claim 5, page 5, line 10; **claim 12**, line 3, each occurrence; **claim 14**, page 9, last line; **claim 21**, page 10, line 4; **claim 29**, page 11, line 5; **claim 33**, page 12, line 5; **claim 34**, page 12, line 4; **claim 36**, page 12, line 4; **claim 38**, page 13, line 8; **claim 58**, page 20, line 3; **claim 59**, page 21, line 3, each occurrence; **claim 65**, page 24, line 3; **claim 68**, page 26, line 2; **claim 72**, line 2;

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claim 80, page 27, line 5 (--and a--); **claim 81**, page 28, line 2;

claim 86, page 28, line 2; replace "or" with --and--.

Claim 36, page 12, line 3, after "protic" insert --alcohol--.

Claim 47, line 1, replace "allolation" with --allylation--.

Claim 3, page 3, lines 14 and 15 and page 4, lines 5, 6, 18 and 19;

claim 8, page 6, lines 17 and 18; page 7, lines 10 and 11; page 8, lines 1 and 2;

claim 49, page 16, lines 3, 4 and 17; **claim 56**, page 20, lines 12 and 13;

claim 63, page 24, lines 12 and 13; replace "can be" with --is--.

Claim 54, page 17, line 4, insert --and-- between "1,3-" and "1,4-".

Claim 65, page 24, line 2, delete "preferably".

Claim 72, page 26, line 1, change the dependency from claim "69" to claim --71--.

Claim 76, page 26, line 1, change the dependency from claim "74" to claim --75--.

Claim 78, page 27, line 4, replace "have" with --are each independently selected from the group consisting of an alkyl group, a cycloaliphatic group, and aromatic group, and a combination thereof having--.

Claim 80, page 27, line 6, replace "have" with --having--.

Claim 87, page 28, line 2, delete "is".

Claim 89, page 28, line 3 and claim 90, page 29, line 3, amend " 1×10^{-6} " to -- 1×10^{-6} --.

Claim 99, page 29, line 2, amend " 1×10^{-3} " to -- 1×10^{-3} --.

Claim 103, page 30, line 1, after "solvent is" insert --selected from the group consisting of--.

Cancel claims 1, 6, 16 and 45.

The following is an examiner's statement of reasons for allowance:

The closest prior art to Liao et al. (col. 3, lines 26-36), Au et al. (col. 13, line 58 to col. 14, line 6), the Journal of Organic Chemistry article by Al-Ajlouni et al. and Chemical abstracts accession no. 2001:55239 of Japanese Patent No. 2001-17863 set forth processes for making an epoxy compound or resin wherein an aryl allyl ether is epoxidized in the presence of hydrogen peroxide and a catalyst. The claim language requiring (c) the reaction of the α -dihydroxy derivative of phenol(s) with a hydrogen halide and a carboxylic acid (ester) to form a phenolic-based α -halohydrin intermediate, and (d) the conversion of the phenolic-based α -halohydrin intermediate to an aryl glycidyl ether of a phenol or mixture of phenols as an epoxy compound or resin is not recited.

Chemical abstracts accession no. 1991:206710 for the Tetrahedron: Asymmetry article by Rao et al. teaches the conversion of an aryloxy allyl ether to a (S)-diol which is subjected to tosylation to generate the epoxide group. There is no recitation of the reaction of the (S)-diol with a hydrogen halide and a carboxylic acid (ester) to form a phenolic-based α -halohydrin intermediate which is converted to a epoxy compound or resin as claimed.

Boriack et al. (col. 5, lines 8-16 and col. 10, lines 1-9, the patent of the application related to provisional application no. 60/205,366 described on page 5, line 21 of the specification) discloses a process for making an epoxy resin comprising converting an α -hydroxy ester of phenol(s) to an α -halohydrin intermediate by *in situ* halide substitution with a hydrogen halide and deesterification, and epoxidizing the intermediate. There is no motivation to convert the aryl allyl ether of Liao et al., Au et al., Al-Ajlouni et al. and Japanese Patent No. 2001-17863 to an α -halohydrin intermediate in the presence of a hydrogen halide as espoused in Boriack et al. prior to epoxidation.

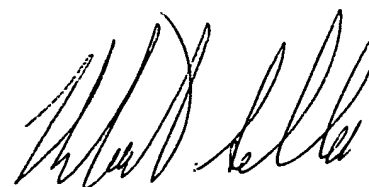
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Sellers whose telephone number is (571) 272-1093. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

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5/23/2005



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